



The role of wellbeing in intelligent transport decisions

Simon Kingham

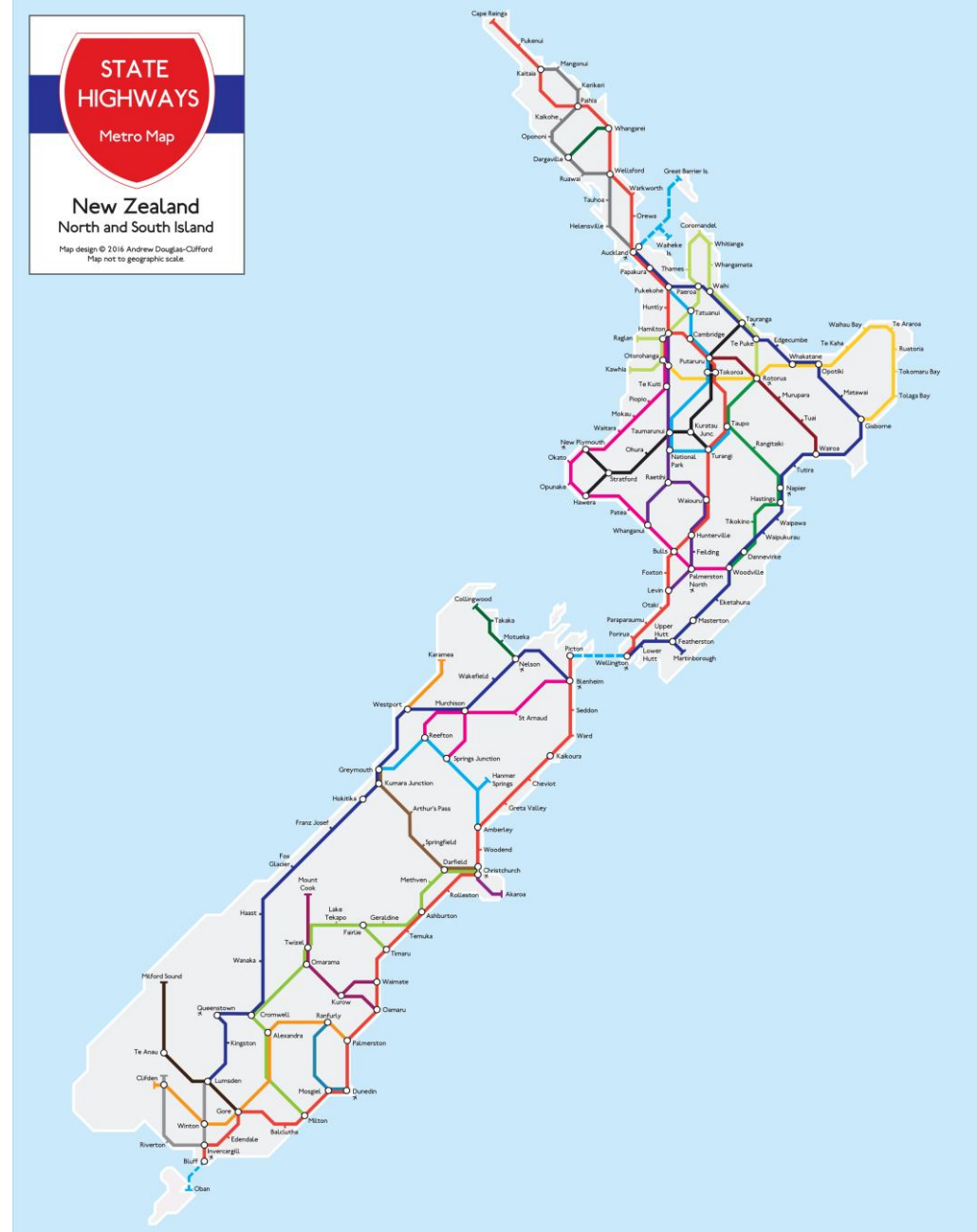
Chief Science Advisor, Ministry of Transport, Wellington, NZ

Professor, University of Canterbury - Te Whare Wananga O Waitaha, Christchurch

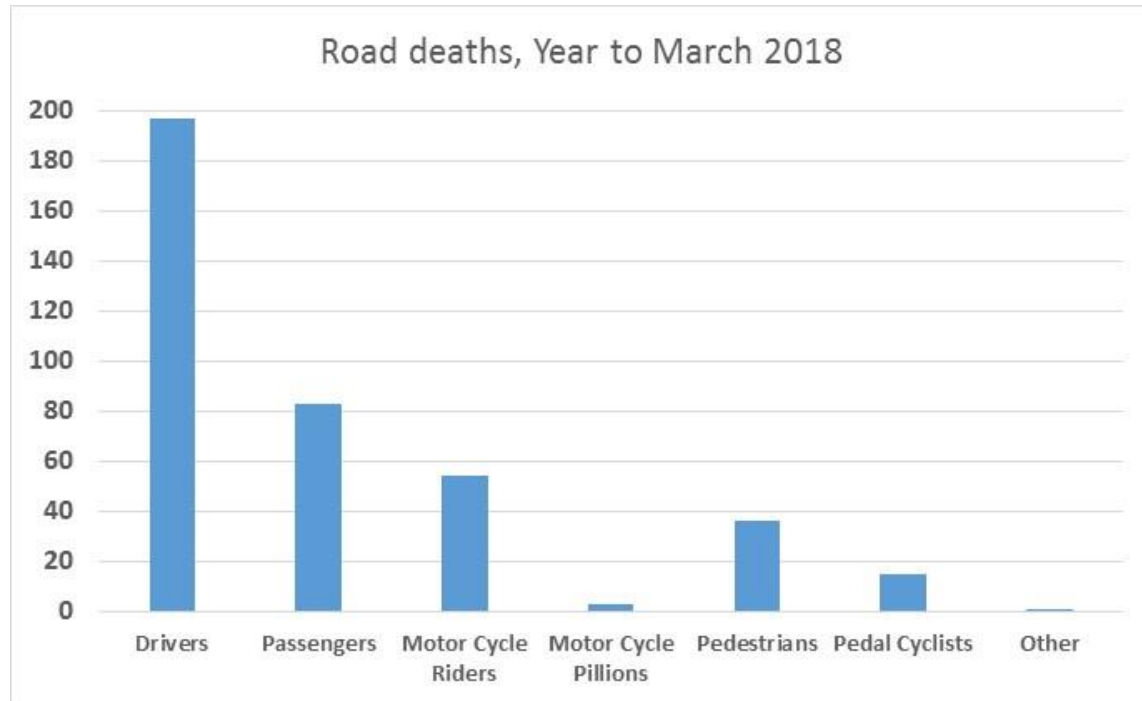
Transport, health and wellbeing

Access

- Employment
- Recreation
- Social support
- Health services
- etc

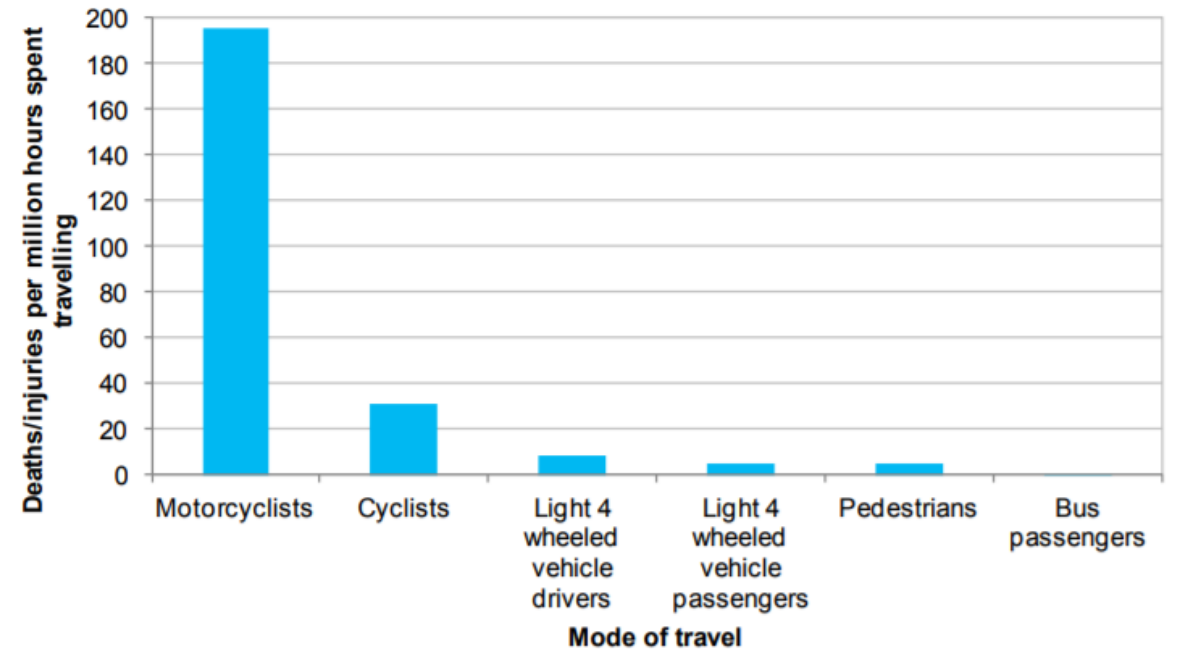


Road traffic accidents



<https://www.nzta.govt.nz/resources/road-deaths/toll.html>

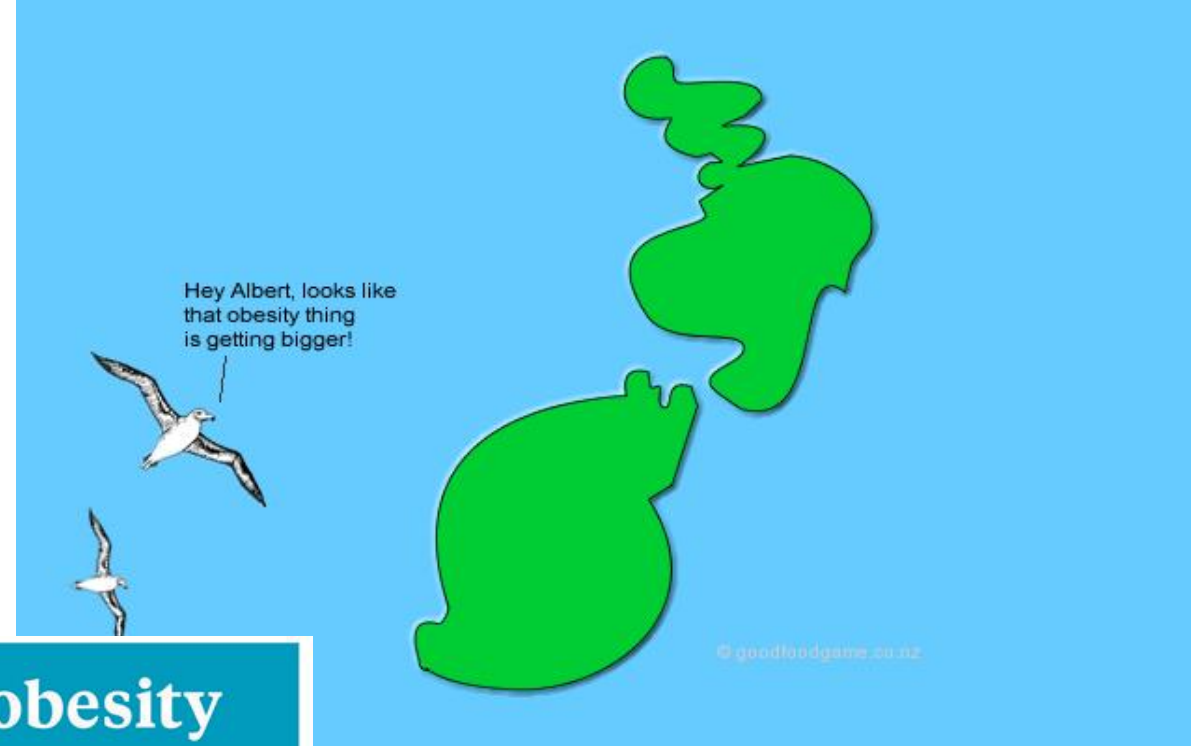
Figure 1: Deaths or injuries in motor vehicle crashes per million hours spent travelling



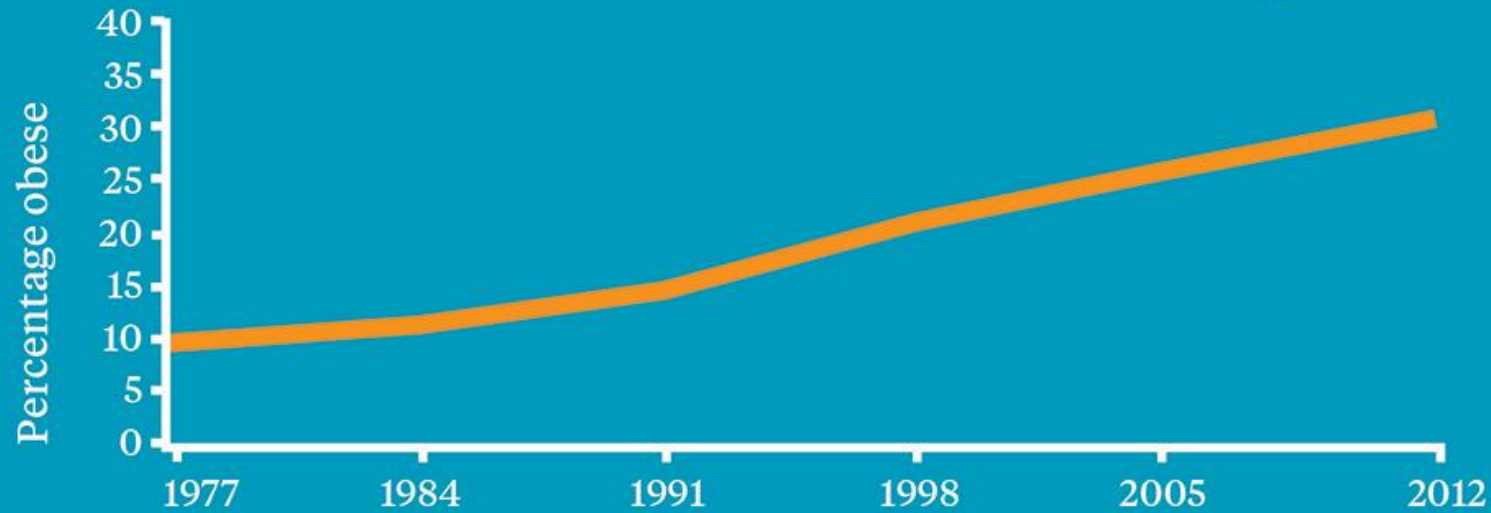
<http://www.transport.govt.nz/assets/Uploads/Research/Documents/Risk-2015-intro-overview-final.pdf>

Social cost of road accidents - \$4bn p.a.

Physical activity



New Zealand has the third highest adult obesity rate in the OECD and our rates are rising

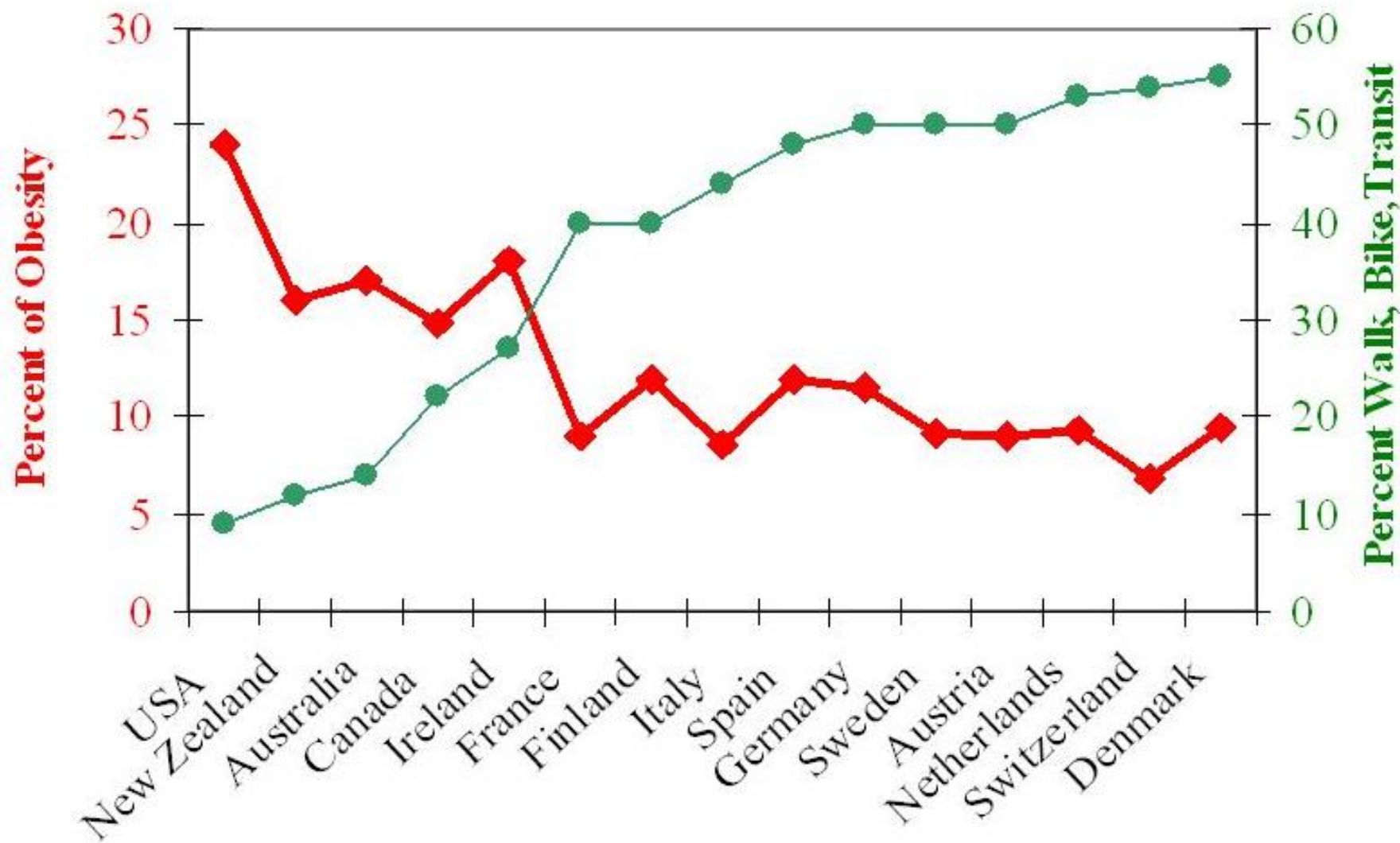


Ministry of Health. 2015. *Understanding Excess Body Weight: New Zealand Health Survey*. Wellington: Ministry of Health.



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Active commuters 'have lower BMI'



◆ Obesity ● Walk, Bike, Transit

Public transport – active?

“a transit trip involves 1250 steps, required to access and egress the network as well as to transfer between routes or modes [a round trip (2500 steps)] accounts for 25% of the recommended volume of physical activity per day” Canada

Transport Policy 18 (2011) 800–806



Contents lists available at [ScienceDirect](#)

Transport Policy

journal homepage: www.elsevier.com/locate/tranpol

Walking to transit: An unexpected source of physical activity

Catherine Morency^{b,c,*}, Martin Trépanier^{a,b,c}, Marie Demers^{b,d}

Journal of Transport & Health xxx (xxxx) xxx–xxx

Contents lists available at [ScienceDirect](#)

Journal of Transport & Health

journal homepage: www.elsevier.com/locate/jth



Preventive Medicine

Volume 99, June 2017, Pages 264–268

Walkability, transit, and body mass index: A panel approach

Michael J. Smart

Analyzing the impact of public transit usage on obesity

Zhaowei She^a, Douglas M. King^b  , Sheldon H. Jacobson^c



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Environment

- Physical environment
 - Air quality incl. exposure
 - Energy and Climate change
 - Congestion
- Built environment
 - Physical and mental health etc

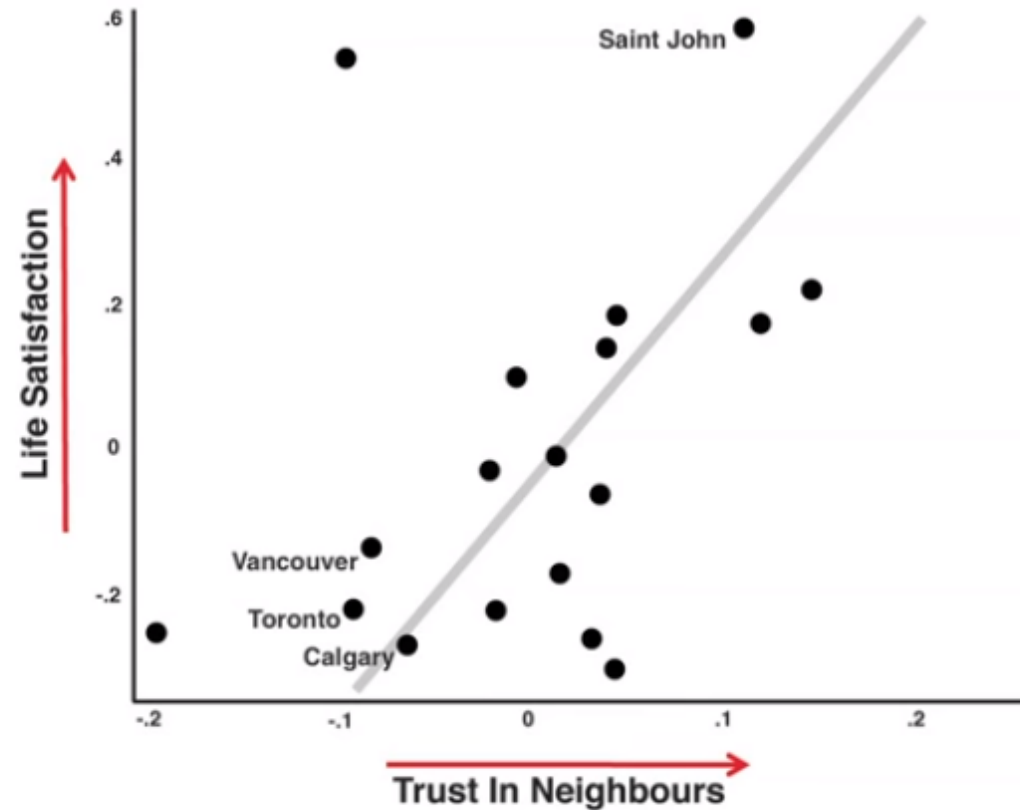


Environment

“People who live in monofunctional, car-dependent neighbourhoods outside of urban centres are much less trusting of other people than people who live in walkable neighbourhoods where housing is mixed with shops, services, and places to work.”

- Happy City

trusting cities = happier cities



courtesy John F Helliwell

Neighborhood Built Environment and Transport and Leisure Physical Activity: Findings Using Objective Exposure and Outcome Measures in New Zealand

Karen Witten,¹ Tony Blakely,² Nasser Bagheri,² Hannah Badland,^{3,4} Vivienne Ivory,² Jamie Pearce,⁵ Suzanne Mavoa,¹ Erica Hinckson,⁴ and Grant Schofield⁴

Conclusions: Associations of neighborhood destination access, street connectivity, and dwelling density with self-reported and objectively measured PA were moderately strong, indicating the potential to increase PA through changes in neighborhood characteristics.

Obesity

The obesity crisis: a healthy population needs a healthy environment

Public Health England is not up to the task, says **Rob Whewey**; we all need to stop eating for winter, says **Cian Foley**; gardening and tai chi can help older people stay fit, says **Louise Ansari**; what priority is the government giving to preserving urban open spaces for pleasant walks, asks **Mark Bryant**



126

Letters

Friday 25 August 2017
19.06 BST



<https://www.theguardian.com/society/2017/aug/25/the-obesity-crisis-a-healthy-population-needs-a-healthy-environment>



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Housing

Inner-city living makes for healthier, happier people, study finds

Residents of higher-density areas are more active, more socially engaged – and less obese – than people who live in the sprawl of suburbia



5273

1,194

Reuters

Friday 6 October 2017
01.13 BST



 Busy city centres beat suburban living when it comes to human wellbeing according to a new report.
Photograph: Dominic Lipinski/PA

Community

- Compared to driving, wellbeing was higher when using active travel or public transport.
- Use of active travel reduced the likelihood of two specific GHQ12 psychological symptoms.
- Switching from car driving to active travel improved wellbeing.
- Wellbeing increased with travel time for walkers, but decreased for drivers.



Preventive Medicine

Volume 69, December 2014, Pages 296–303



Does active commuting improve psychological wellbeing?
Longitudinal evidence from eighteen waves of the British
Household Panel Survey

Adam Martin^{a, b},  , Yevgeniy Goryakin^{a, b},  , Marc Suhrcke^{a, b, c},  



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Wellbeing Lower Among Workers With Long Commutes



by Steve Crabtree

Back pain, fatigue, worry all increase with time spent commuting

WASHINGTON, D.C. -- American workers with lengthy commutes are more likely to report a range of adverse physical and emotional conditions, leading to lower overall scores on the Gallup-Healthways Well-Being Index.

Drivers Have the Most Stressful Commutes

Transit riders and walkers, who avoid the “unexpected delays” of traffic, stack up better in a new survey.

ERIC JAFFE |  @e_jaffe | Sep 21, 2015 |  4 Comments

Transportation Research Part F 34 (2015) 141–151



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Contents lists available at ScienceDirect

Transportation Research Part F

journal homepage: www.elsevier.com/locate/trf

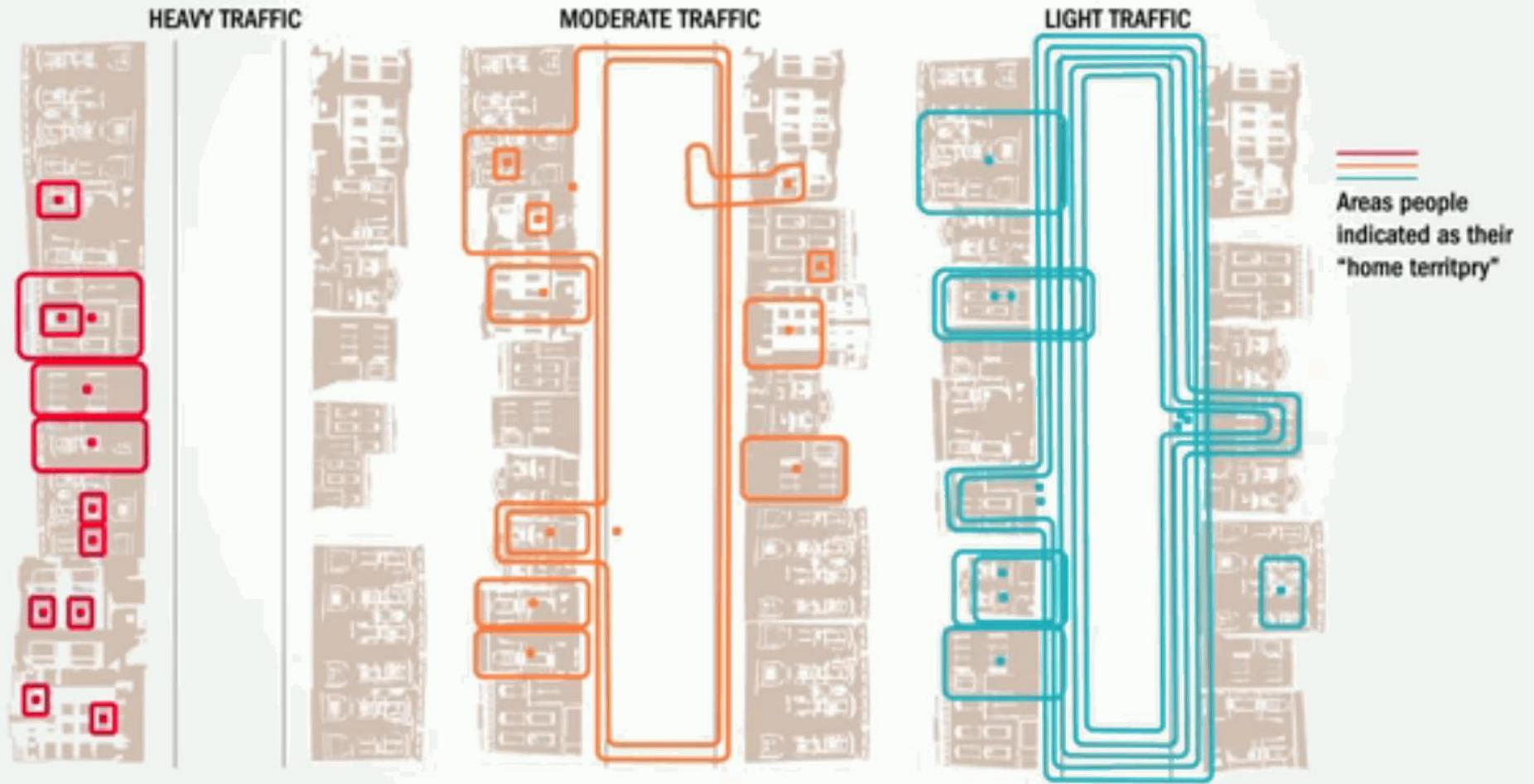
Am stressed, must travel: The relationship between mode choice and commuting stress

Alexander Legrain ^a, Naveen Eluru ^b, Ahmed M. El-Geneidy ^{a,*}



Traffic and community

Home Territory on Three Streets



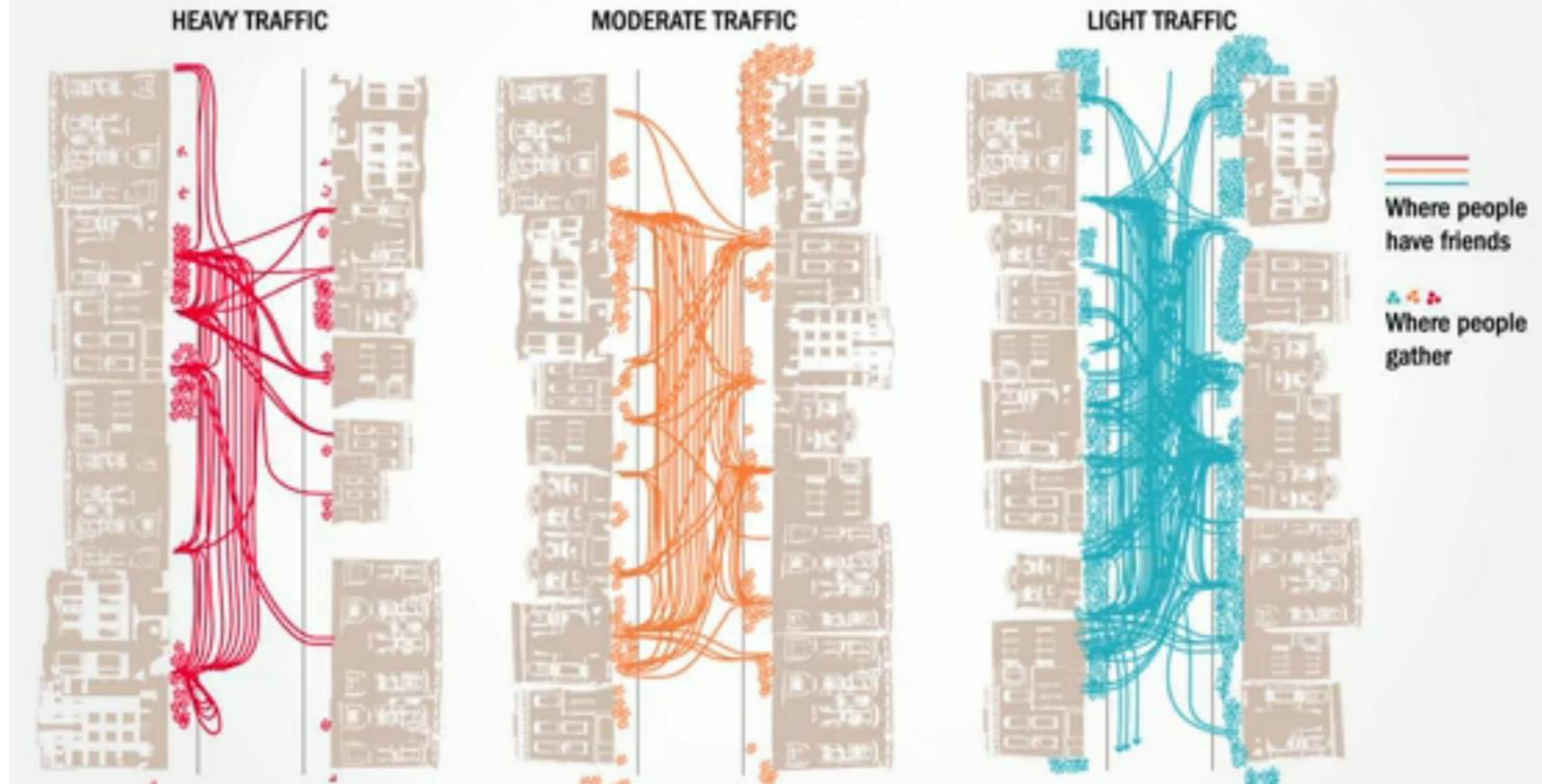
Traffic levels: 16,000, 8,000 and 2,000 vehs per day

Figure 2: This illustration shows how a resident's sense of their home territories shrinks as traffic grows heavier and faster.

Source: Figure 4, page 23, *Livable Streets*, Donald Appleyard, University of California Press, 1981.



Social Interactions on Three Streets - Neighboring and Visiting



Traffic levels: 16,000, 8,000 and 2,000 vehs per day

Figure 1: This image shows how community ties can actually be knit together by a street that is livable and inviting — or torn apart when auto traffic noise, pollution, and threats dominate the street environment.

Source: Figure 3, page 21, *Livable Streets*, Donald Appleyard, University of California Press, 1981.

Christchurch research

Residents surveys

- Streetscape, traffic volume



Heavy
8,000-14,000 vpd



Moderate
1,400-2,500 vpd



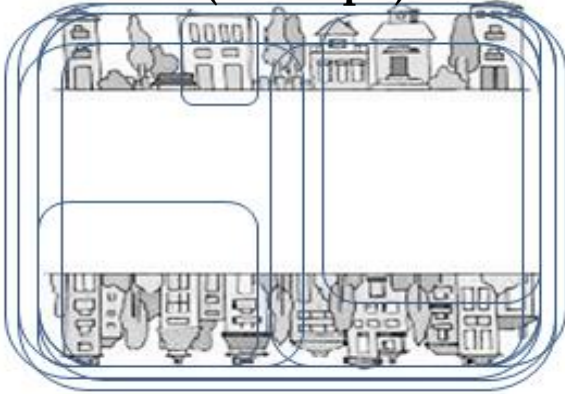
Light
Under 500 vpd



Jesse Wiki

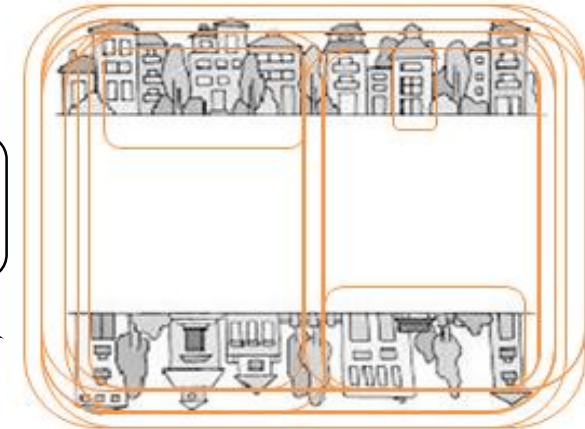
Local Home Area

LIGHT (<500 vpd)



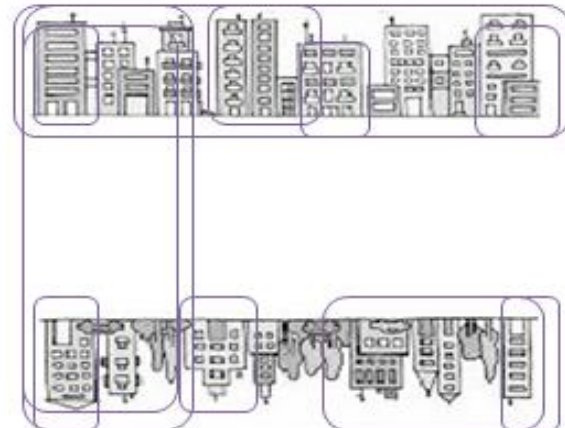
"We have adopted this street as our home"
"Quiet, clean and friendly"

MODERATE (1400-2,500 vpd)



"Local parks host most of the leisure activities and games"
"I like the general ambience"

HEAVY (8,400-14,000 vpd)



"You don't see many people"
"I would prefer not to live on such a busy and public street with noise, car fumes and dust"

Neighbourhood Connections

LIGHT (< 500 vpd)



5.1 average connections

"We have great neighbours and live in a safe street"
"I enjoy talking with my neighbours"

MODERATE (1400-2500 vpd)



5.9 average connections

"Most people get out and about and talk on the street"
"Family-orientated and friendly"

HEAVY (8,400-14,000 vpd)



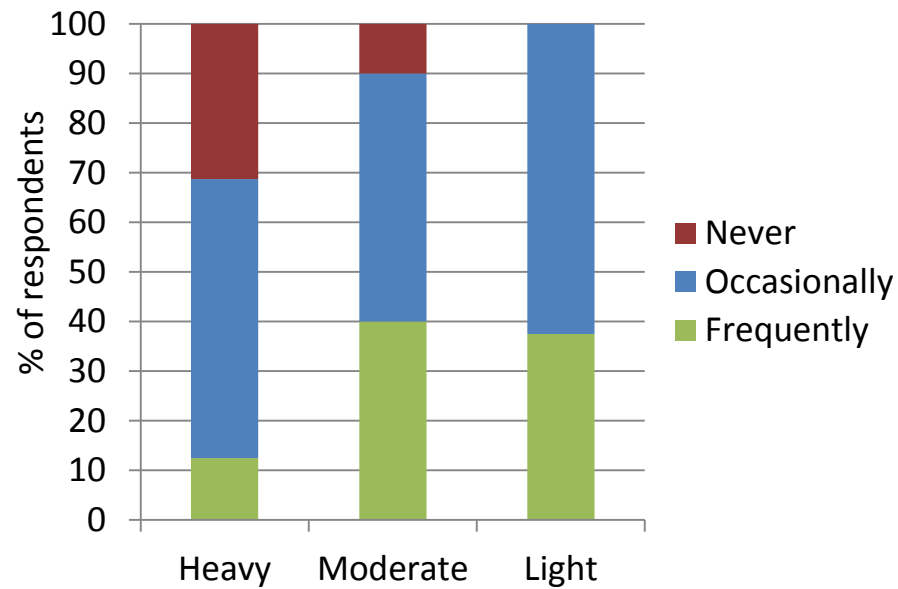
2.1 average connections

"My street is a car thoroughfare"
"Lived here over 35 years, a decline in people talking to neighbours and children playing"

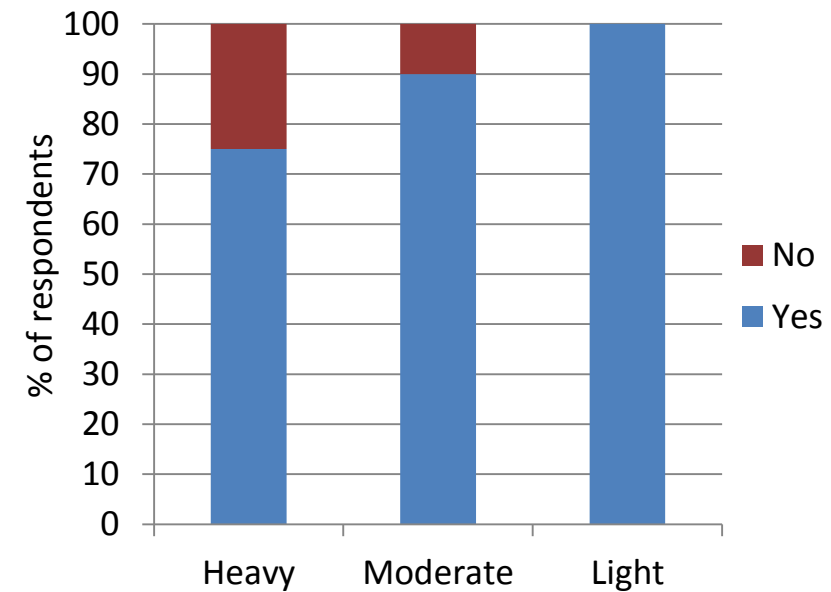


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Community and belonging



**Community
Interaction**



**Sense of
Belonging**

Overall impacts

On average, the estimated health benefits of cycling were substantially larger than the risks relative to car driving for individuals shifting their mode of transport

- de Hartog et al, 2010, Do the health benefits of cycling outweigh the risks? EHP 118, 8, 1109-1116.

The findings, which demonstrate a consistent dose–response for improved function and health, provide strong support for the promotion of cycling for public health

- Oja et al, 2011, Health benefits of cycling: a systematic review. Sc Jnl of Med & Sci in Sports, 21: 496–509

The health benefits of moving from cars to bikes heavily outweigh the costs of injury from road crashes

- Lindsay G, Macmillan A & Woodward A, 2011, Moving urban trips from cars to bicycles: impact on health and emissions. Australian and New Zealand Journal of Public Health, 35: 54–60.

Christchurch research

What can we learn about community from post-earthquake Christchurch

Interviews with residents, leaders, stakeholders

- Density, Socio-economic status, accessibility, environment, urban form



Karen Banwell

What we found: home & place

- **Geographically defined** - hills, river, parks, social boundaries
- **Housing stability** – often renting vs owning, longevity of tenure
- **Pre-existing community development initiatives/programmes** – govt or community, formal or informal

What we found: streets and travel

- **Intimate streets** – cul-de-sacs, laneways, back sections
 - *“Our street is wide so we don’t know each other”*
 - *“People get into their cars and go to work and then come home press the little button for their garage door and they go inside to their private spaces never once turning around”*

Friday, 13 November 2015

Back lanes as recreational areas

Popular Now in Metro

KTM begins installing new ticket machines

Giving it my best

High price to pay for security

Dr Fatimah: Non-life threatening cases should avoid A&E units at hospitals

Han emperors' favourite sweet

THE IPOH City Council is mulling the idea of converting back lanes into recreational areas, similar to what is being done in many other countries.

Mayor Datuk Zamri Man said the council is studying the suitable locations at Ipoh's Old and New Town areas.

He said either the back lanes could be converted to recreational areas or made into parking lots.

"Since we have limited places to construct recreational areas within the city, we need to enhance and upgrade the existing ones.



back lane project - OUR LOST SPACE

WINNER: GRAND PRIZE WINNER



Gardening? It's right up our alley! Community transforms Victorian passageway behind homes into oasis of greenery

- Once-dingy lane in Middlesbrough now haven of hanging baskets, trellises and trees with apples and pears
- Mavis Arnold has helped turn lane into a wonderland, while neighbouring alleys are still scruffy and rundown
- Alley was well-kept in 1960s but as the decades dragged on residents began to dump their rubbish on cobbles

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Forgotten 'country lane' experiment could be answer to Vancouver's desire for more green space

BRIAN HUTCHINSON | July 2, 2013 5:10 PM ET
More from Brian Hutchinson | @hutchwriter

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CHAT TRUST

Churches Acting Together in Arthur's Hill



Services / Reclaim the Lanes

Reclaim the Lanes

For anyone familiar with the West End of Newcastle the back lanes of the terraces are known to be an ongoing issue as regards rubbish. Working with our partners - Greater Jesmond Community Partnership, Jesmond Community House

quick access, place your bookmarks here on the bookmarks bar. Import



Living Here About Strathbungo Strathbungo Society

Bungo in the Back Lanes, 2016 – THANK YOU!

June 21st, 2016 Kevin Kane

A BIG THANK YOU from The Strathbungo Society to everyone who contributed to making Bungo in the Back Lanes, 2016 such a great



No comments

of Transport
WAKA

What we found: streets and travel

- **Intimate streets** – cul-de-sacs, laneways, back sections
 - *“Our street is wide so we don’t know each other”*
 - *“People get into their cars and go to work and then come home press the little button for their garage door and they go inside to their private spaces never once turning around”*
- **Walkable** – safe, attractive and connected
 - *“Because walking somewhere you see people and that is really important to us to see people and have that eye contact and being human together”*
 - *“It can take a long time to get to the shops unlike the places with fences and garages”*
- **Green** – presence of trees



Trees
e.g. Christchurch



What we found: proximity and urban design

- **Local** - community hubs, library, pools, parks, recreation areas
 - *“If you have to get in your car it’s not local”*
- **Bumping places** - schools, shops, street furniture
 - *“The school was the only bumping place for Phillipstown and then the Ministry closed it, the constancy in the children’s lives. The Ministry did not see the school as a community hub or the importance for the community”*
- **Gathering places** - churches, pubs, cafes
 - *“It’s hard for people to engage with each other when you don’t have a meeting place to come together”*

Bumping spaces

e.g. Vancouver (SK)



Bumping spaces

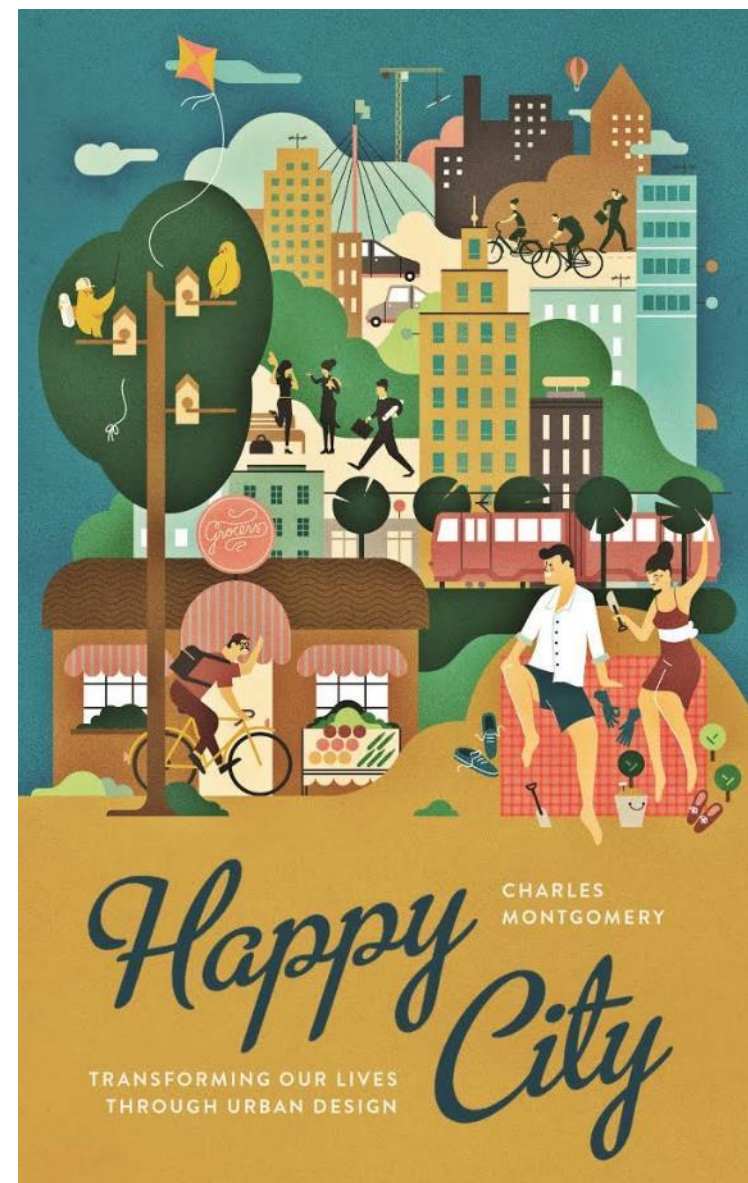
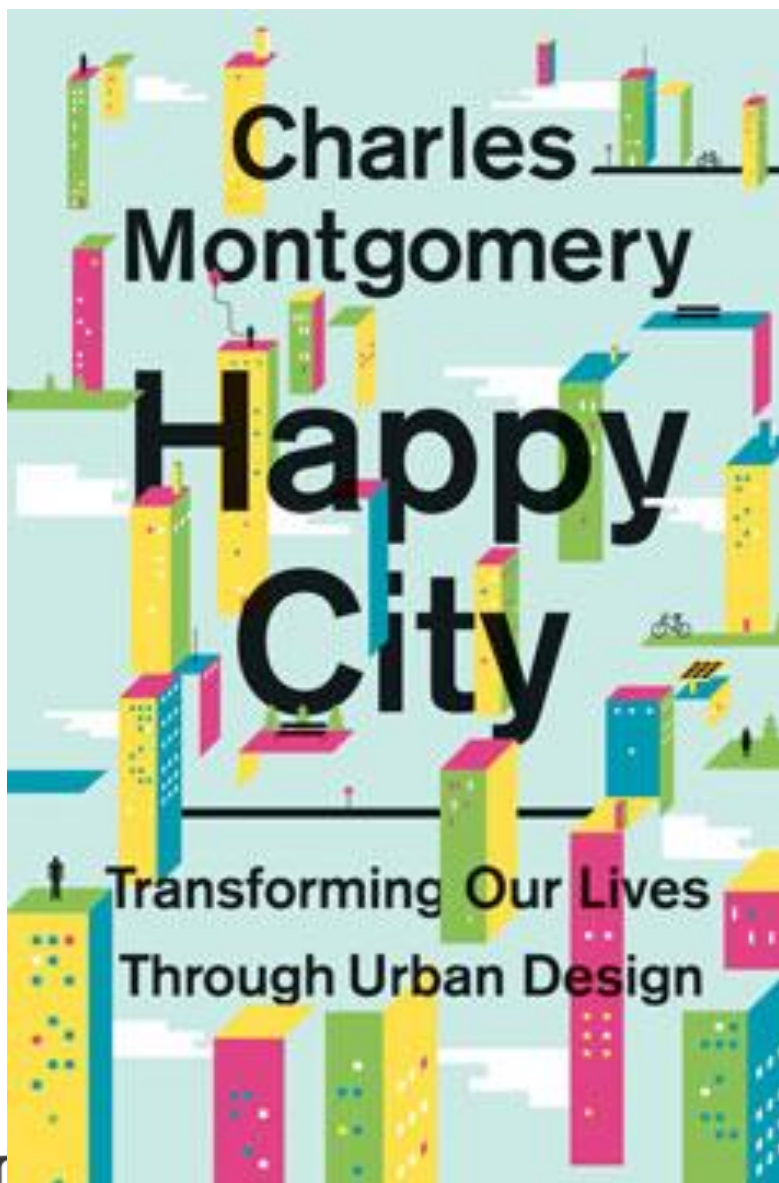
e.g. Christchurch (SK)



Bumping spaces

e.g. Christchurch (Alan Jamieson)





Transport features of healthy communities

- Walkable
- Low/slow traffic
- Good public transport
- Close proximity to facilities e.g. schools, shops, job
- Green – trees
- *Bumping* and *gathering* spaces/places

Wellbeing and intelligent transport decisions

- Time/speed rules!
- Saving of travel time has been central to transport decision making

Wellbeing and intelligent transport decisions

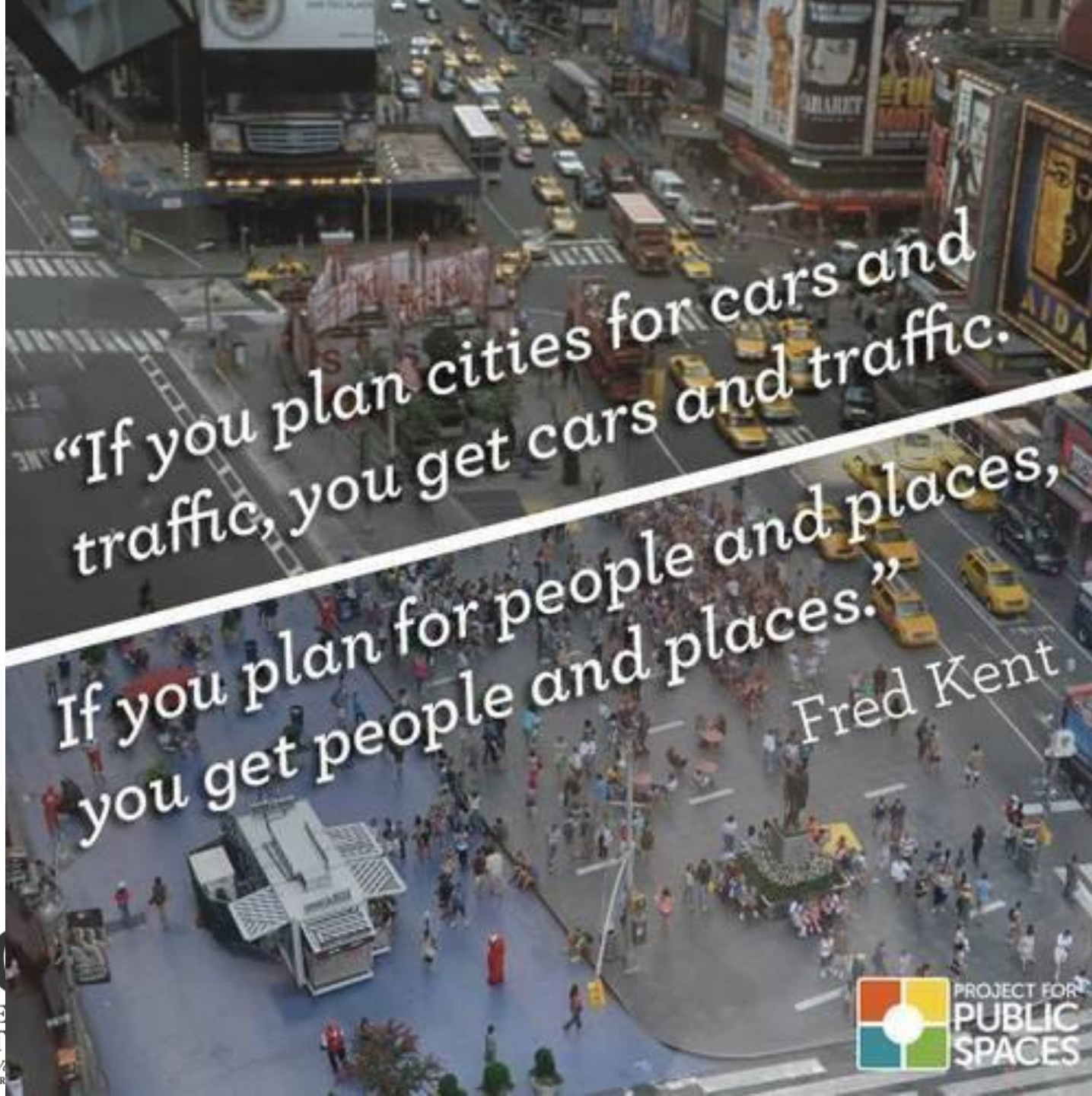
*The idea that the main benefit of improvements to transport infrastructure is the saving of travel time has been central to transport economic analysis. There is, however, **little empirical evidence to support this** proposition. Indeed, in the long run average travel time is conserved, implying that **travellers take the benefit of improvements in the form of additional access to more distant destinations made possible by higher speeds.***

Metz D, 2008, The myth of travel time saving. Transport Reviews, 28, 3, 321–336.

www.greaterauckland.org.nz/wp-content/uploads/2009/10/Metz-2008.pdf

Final thoughts

- Fast is not always best
 - *“It can take a long time to get to the shops unlike the places with fences and garages”*
- Door to door may not always be best
 - Exercise and interaction are good
- Very slow *residential* streets (5 km/h)
 - Streets as recreation spaces - walk, bike (slow) etc.
 - Only essential vehicles (disabled, deliveries, emergency)
- Charging for space
 - more for *healthy* or *slow* space



“If you plan cities for cars and traffic, you get cars and traffic.”

If you plan for people and places, you get people and places.”

Fred Kent



Thanks

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 @SimonKingham

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